

The "8% Problem": Chronic Juvenile Offender Recidivism

Exploratory Research Findings and
Implications for Problem Solution(s)

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March, 1994



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May 11, 1994

Jack Leister, Head Librarian
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Dear Mr. Leister:

I am pleased to provide you with a copy of the report that you requested from us, entitled The "8% Problem": Chronic Juvenile Offender Recidivism. This report is the result of nearly fifteen years of work in the area of juvenile offender risk prediction, and a series of longitudinal studies aimed at evaluating the profile characteristics of minors who recidivate with various frequencies, both as juveniles and adults.

We believe this research will ultimately make an important contribution to improved program results with those minors who present the greatest risk of becoming chronic juvenile and adult offenders in Orange County.

The "8% Problem" is a shorthand method of referring to a very small percentage of juveniles who create the majority of Juvenile Court cases and whose characteristics are readily identifiable at their first referral to the Probation Department by the police. Of equal importance is a better understanding of the characteristics of the juveniles who are arrested once or twice and do not reenter the juvenile justice system after these initial encounters.

The next study phase will involve a test of the recommended case identification procedures and proposed program elements. Our pilot project will focus on first-time wards age 15 or less at the time of their initial referral, who present a multi-problem profile -- the group of minors that, in Orange County, appear to account for the largest volume of chronic juvenile and adult offenses. Through improved information sharing and risk assessment techniques, we believe we can accurately identify the majority of this latter group (80-90%). Report Section 2.0 describes the program design elements that we believe are critical to the success of the proposed comprehensive early intervention efforts.

Thank you very much for your interest in this report. Please contact us with your feedback or if you would like further information.

Yours very truly,

GWEN A. KURZ, Director
Program Planning & Research Division

GAK:md

Attach.

The "8% Problem": Chronic Juvenile Offender Recidivism

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Implications for Problem Solution(s)**

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PREFACE

This report has been prepared to provide an overview of the findings of a set of exploratory studies pertaining to the early identification of chronic juvenile offenders, conducted in Orange County, California between 1989 and 1993, by the research staff of the Orange County Probation Department.

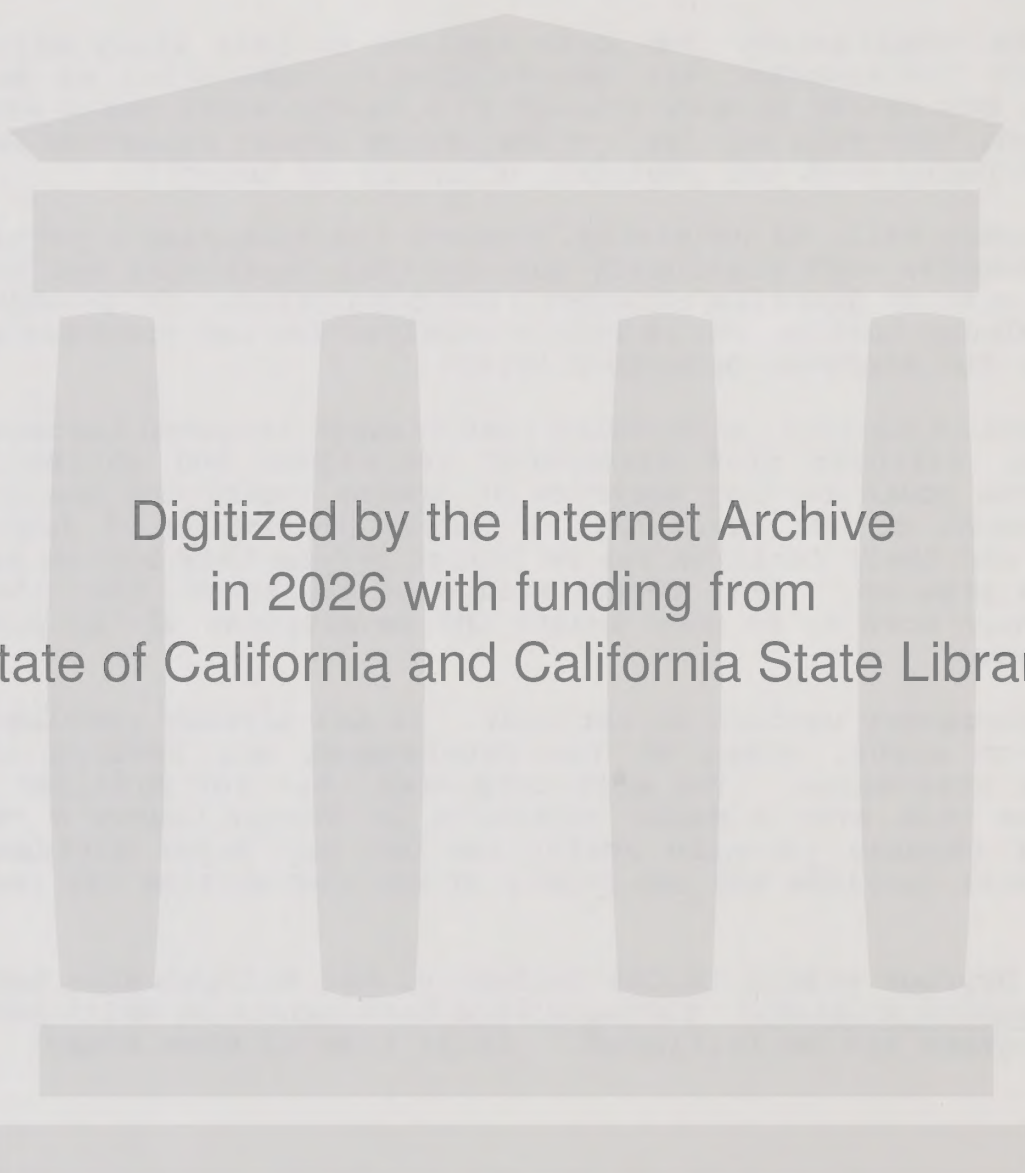
The term "exploratory" has been applied to this study effort in that the "8% problem" was not originally identified so much by intent, but rather as a by-product of a search which began with the question, "How well are "we" -- the Orange County Probation Department -- doing with the youthful offenders of today?"

This report will, of necessity, present and summarize a portion of the extensive work previously done by this Department and others, in the area of juvenile offender risk prediction. It is this body of knowledge that served as both a catalyst for and provided direction to the analyses described herein.

This work is hopeful, concluding that through improved information-sharing, offender risk assessment techniques and collaboration among the youth serving agencies of Orange County and the greater involvement of its citizenry, a larger proportion of high risk minors and their families can be helped before they become part of the "8% problem." This report will also illustrate that there is still much work to be done toward the development of "8% problem" solutions.

The exploratory venture is not over. It has already resulted in a follow-on study, aimed at the development and testing of new program strategies. The work completed thus far provides ample evidence that even a small reduction in Orange County's current rate of chronic juvenile recidivism can pay major dividends to individual families and the safety of our communities for years to come.

As Joy Dryfoos states in the Preface of her enlightening book, "Adolescents at Risk," "the knowledge base exists on which successful programs can be initiated." It is time to move ahead.



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1. THE "8% PROBLEM"

A. Background

Over the decade of the 1980s, the County of Orange has become increasingly urban and more ethnically and culturally diverse. Statistics published by the County Administrative Office indicate that from 1980 to 1990:

- The total population of Orange County increased by 26%.
- The number of cities in Orange County grew to 31, with ten over 100,000 population and five new since 1988.
- The Hispanic population of Orange County doubled while its Asian population tripled. One in four Orange County residents is now Hispanic while one in ten is Asian.
- 7400 undocumented aliens were added each year for a total of 166,000 by 1990.

Over the same time period, there has been dramatic growth in the number of criminally active gangs, violent crimes and crimes involving the use of weapons. Many of these serious crimes have involved juvenile offenders. Information provided by the California Center for Law Enforcement Assistance indicates that, from 1980 to 1990, juvenile arrests for violent crimes increased by 45% -- Murder +130%, Forcible Rape +70%, and Robbery +65% -- while juvenile felony arrests involving the use of weapons increased by 48%.

The resources available to County and city governments to deal with the problems and challenges of increased urbanization have not kept pace. The trend has, therefore, been to focus a greater proportion of available resources on the most difficult urban problems.

The juvenile justice system of Orange County is no exception. As the number of referrals for serious crimes has increased, the demand for programs and services that ensure a higher level of community protection has also increased. According to the records of the Orange County Probation Department, from 1980 to 1990, Juvenile Court dispositions involving custody increased by 43% -- commitments to local institutions +40%; commitments to the California Youth Authority +169%.

These higher control dispositional options are very costly. Local commitments in Orange County, while averaging only 74 days, cost approximately \$5500 each whereas commitments to the California Youth Authority average just over two years and cost about \$55,000 per commitment. If a minor receives multiple commitments at any level, the custody costs alone become staggering! (1)

(1) Local custody cost data provided by the Orange County Probation Department. State custody cost data provided by the California Youth Authority.

Noting these disturbing trends, between 1985 and 1987, the Orange County Probation Department implemented a model for the management of probation resources recommended by the National Institute of Corrections (NIC). This model is predicated on the use of valid procedures for assessing the relative degree of risk various groups of minors present for committing multiple offenses. Therefore, as part of model implementation, the Department developed and validated a Juvenile Offender Risk Assessment instrument, with technical assistance from the Office of Juvenile Justice and Delinquency Prevention and NIC staff.

Developed for use with a probation field supervision population, the instrument was initially constructed utilizing those factors that Juvenile field supervision officers felt best predicted subsequent offense behavior. Data was collected on both new and active cases to test the proposed Initial Assessment and Reassessment instruments. This sample of over 500 cases was followed for a six-month period and any subsequent petition filings recorded. These included both alleged technical and new law violations.

Based on these data analyses, the Orange County classification instruments were fine-tuned to achieve maximum discrimination (Baird, 1985) based on the dependent variables i.e., the number of new law and technical violations over an initial six-month tracking period. The following factor sets were found to differentiate High, Medium and Low Risk juvenile probationers in Orange County, in order of their relative contribution to a higher risk of re-offending.

- **PRIOR OFFENSE HISTORY:** Multiple measures, ranging from prior arrests up to and including prior incarceration or out-of-home placement. (The more "priors," the higher the Risk score).
- **MULTIPLE PROBLEMS:** Includes lack of parental supervision and control; school attendance, behavior and/or performance problems; substance abuse; chronic runaway behavior; and, gang affiliations. (The more problems, the higher the Risk score).
- **AGE AT INITIAL ASSESSMENT (15 or younger vs 16 and older):** This factor proved to be important in relation to the other two factor sets; particularly, the problem variables referenced above. (Younger minors with multiple problems had significantly higher recidivism rates than their older counterparts in both the Medium and High Risk groups.)

When these Juvenile Offender Risk Assessment instruments were formally adopted by the Department and placed into department-wide use, a Management Information System component was also established to record the profile of each minor at the Initial and most recent (or, Final) Assessment and document all technical and new law violations occurring during each minor's period of supervision. Thus, the capability was created to monitor and test the validity of these classification instruments, both over time and for longer periods of offense tracking than those utilized in the original validation effort.

It is relevant to note here that many other researchers have identified and reported risk factors similar to those included in the Orange County Probation Department classification instrument(s). For example, in summarizing the work of many researchers relative to juvenile offender risk prediction, Rolf and Magna Stouthamer-Loeber state that "for almost all behavior categories, serious delinquency and recidivism were better predicted than delinquency in general" (1987). Therefore, the Orange County Probation Department finding, that probationers with prior offense histories are more likely to commit subsequent offenses, is not too surprising.

The notion of High Risk minors presenting a multi-problem profile is not a new one either. In the analyses conducted by Farrington (1983), offenders with six or more offenses by age 25 scored High on three out of the following seven factors, at or before the age of thirteen: troublesomeness, conduct disorder, acting out, social handicap, criminal parents, poor parental childrearing behavior and low IQ. More recently, many researchers have focused on the multiple correlates of the early onset of delinquent careers (Wilson and Hernstein, 1985; Farrington and West, 1990; Gottfredson and Hirschi, 1990; Farrington and Hawkins, 1991; Greenwood, 1992; and, Nagin and Farrington, 1992).

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) has funded a very important Program of Research on the Causes and Correlates of Delinquency (Huizinga, Loeber, and Thornberry, 1993). Following completion of longitudinal studies at three sites, using common measures and the oversampling of high risk youth, the following behavioral factors were found to contribute to serious, violent and chronic juvenile crimes:

- Delinquent peer groups;
- Poor school performance;
- High crime neighborhoods;
- Weak family attachments;
- Lack of consistent discipline;
- Physical or sexual abuse.

This work is being utilized by OJJDP as a basis for designing prevention programs and new intervention strategies (Wilson and Howell, 1993).

Additionally, many studies have documented the fact that chronic juvenile offenders tend to start their careers early (Wolfgang, Figlio and Sellin, 1972; Hamparin et al., 1978; Wolfgang, Thornberry and Figlio, 1987; and Shannon, 1988). The authors of OJJDP's Juvenile Comprehensive Strategy for Serious, Violent, and Chronic Offenders (Wilson and Howell, 1993) conclude that "Delinquent behavior should not be left unattended because it leads to the deterioration of pro-social skills and to the acquisition of other problem behaviors." It is this "co-occurrence of problem behaviors and their interlocking relationships" that Orange County Probation Department researchers have found to be characteristic of the high risk juvenile offender in Orange County.

B. Problem Identification

In late 1988, a department-wide strategic planning effort was launched, aimed at preparing for the anticipated changes and challenges in Orange County during the decade of the 1990s. Among the first questions raised by the participating managers were:

1. How are "we" -- the Orange County Probation Department -- doing with the youthful offenders of today?
2. Does the historical effectiveness information provide any clues as to how the department needs to change its service delivery systems to be more effective with the youthful offender populations of the next decade?

A significant amount of information was available on the outcomes achieved by individual program components administered by the Department, such as the County's Juvenile Diversion program, probation field supervision and institutional treatment programs. However, there was very little information available by which to gauge the effectiveness of the Department's overall juvenile operation or the relative costs of serving minors who re-offend with different frequencies.

In this latter regard, one data set offered some promise -- the Juvenile Court and Probation Statistical System (JCPSS) maintained by the California Bureau of Criminal Statistics (BCS), now known as the Law Enforcement Assistance Center. While containing a somewhat limited set of information (2), the Orange County data was both complete and known to be of consistently high quality, thanks to the efforts of both BCS and Departmental clerical staff over the years of the JCPSS' existence.

In 1989 and again in 1990, two recidivism analyses were completed with assistance from the California Bureau of Criminal Statistics. Both involved the identification of an entire cohort of minors with their "first ever" application for petition during the first six months of either 1985 or 1987. In both study efforts, the number of minors identified equated to over 3000 individuals.

-
- (2) The JCPSS data base consisted of all minors referred for alleged criminal code violations, for which the disposition of that offense occurred within a given calendar year. The data base includes: the minor's name, date of birth, gender, ethnicity, the highest referral charge -- both the level (felony vs misdemeanor) and type (criminal code section) -- and all system disposition data and dates (Probation, District Attorney and Court) related to each application for petition. Unfortunately, this system was terminated in October, 1990, due to budget cutbacks at the state level.

The 1985 cohort was tracked through the end of 1987 (and, the 1987 cohort was tracked through the end of 1989) to identify:

1. Any minors having subsequent applications for petition within each three-year study period;
2. The number and proportion of minors with 1, 2, 3 etc. subsequent applications for petition within each three-year tracking period.

At least two-thirds of the minors in either study time frame did not get re-arrested or have a second application for petition in Orange County. Some aspect of their contact with police, probation or the courts worked -- the first time around. This was the "good news" of these preliminary study findings.

The "bad news" was that a small percentage of each study cohort -- 10% in the first study and "8%" in the second -- accounted for over half of the subsequent offenses committed by each study group. It was upon completion of the second set of recidivism analyses presented in Table 1 (see next page) that the group of minors with 4 or more applications for petition during the three-year tracking period began being referred to as the "8% problem."

This finding, that a small proportion of juvenile offenders accounts for the bulk of all serious and violent juvenile offenders, was first noted by Wolfgang, Figlio and Sellin (1972). In their Philadelphia birth cohort study these authors found that minors with 5 or more police contacts constituted 6 percent of the cohort of 10,000 males born in 1945 (and, 18 percent of the delinquents) but was responsible for 62% of all offenses and about two-thirds of all violent crimes committed by the cohort.

When Wolfgang et al repeated this study (Wolfgang, Thornberry and Figlio, 1987), they reached nearly identical conclusions i.e., 8% of the sample had 5 or more arrests by age 18, accounting for the overwhelming majority of crimes committed by that birth cohort -- nearly 14,000 males born in 1958. Other studies have produced similar results (Strasburg, 1978; Hamparian et al., 1978; Shannon, 1988; and Huizinga, Loeber, and Thornberry, 1993).

Table 1: Orange County Juvenile Justice System Recidivism Analyses

1985 Cohort Study Results

<u>No. of Referrals per minor during 3-year Tracking Period</u>	<u>No. of Minors in each Category</u>	<u>% of Total Minors</u>	<u>No. of Referrals for Each Category</u>	<u>No. of Subsequent Referrals</u>	<u>% of Subsequent Referrals</u>
1	2,190	66%	2,190	0	0%
2	541	16%	1,082	541	22%
3	248	8%	744	496	20%
4-14	325	10%	1,771	1,446	58%
<u>Total</u>	<u>3,304</u>	<u>100%</u>	<u>5,787</u>	<u>2,483</u>	<u>100%</u>

1987 Cohort Study Results

<u>No. of Referrals per minor during 3-year Tracking Period</u>	<u>No. of Minors in each Category</u>	<u>% of Total Minors</u>	<u>No. of Referrals for Each Category</u>	<u>No. of Subsequent Referrals</u>	<u>% of Subsequent Referrals</u>
1	2,234	71%	2,234	0	0%
2	472	15%	944	472	24%
3	205	6%	615	410	21%
4-14	253	8%	1,339	1,086	55%
<u>Total</u>	<u>3,164</u>	<u>100%</u>	<u>5,132</u>	<u>1,968</u>	<u>100%</u>

C. Problem Definition (Relationship to Juvenile Risk Factors)

Having identified this "8% problem" group, the next phase of data exploration was aimed at broader definition of the problem, using the authors' knowledge of juvenile offender risk prediction factors to guide the analysis plan.

Noting that the Department does not appear to be doing well with its "8%-ers" now, the specific study questions were:

1. Are the "8%" minors different from the other two groups of non- and low rate juvenile recidivists in ways that can be accurately and consistently identified early in their careers (at the first or second system referral)?
2. Is there anything in the data regarding the profile or current handling of these "8%" minors that would provide us with clues as to problem solutions (i.e., more cost-effective intervention strategies and/or ways of allocating limited juvenile justice system resources)?

To answer these questions, the next study phase focused specifically on the 1987 study group -- the more recent of the two Initial Referral cohorts. Of the factors which were found to best discriminate risk of re-offending in the development of Orange County's Juvenile Offender Risk Assessment scale, only one -- the Minor's Age -- was available in the database used to identify the "8% problem" i.e., the 1987 Initial Referral cohort. Therefore, the starting point for the next set of analyses focused on exploring differences between the three major study groups, defined below, on the basis of the Minor's Age at final disposition of the initial referral.

o Non-recidivists (N = 2205)	Those minors with <u>one referral only</u> during the 36-month follow-up period.
o Low Rate recidivists (N = 663)	Those minors with <u>2 or 3 referrals</u> during the 36-month follow-up period.
o Chronic recidivists or "8% problem" (N = 247)	Those minors with <u>four or more referrals</u> during the 36-month follow-up period.

The minor's age at the time of final disposition of the initial referral was used to further partition the study cases into two groups:

- o Minors age 15 or younger;
- o Minors age 16 and older.

It was expected that a majority of the chronic recidivist (8%) group would be age 15 or younger at the time of their initial case disposition. This indeed proved to be the case. 57% of the "8%-ers" were age 15 or younger vs. only 23% and 31% of the non-and low rate recidivist groups, respectively.

Reference to Chart 1, Appendix C, indicates that the chronic recidivist group also contained a significantly higher proportion of males, Hispanic minors and felons (based on the referral offense only) than the other two major study groups. From a case processing perspective, it is interesting to note that nearly half of the minors who became recidivists were made wards of the Juvenile Court at their initial system referral vs. only 22% of the non-recidivist study group.

Table 2 presents chronic recidivism rates for the 1987 Initial Referral cohort, controlling by both the minor's age at initial case disposition and wardship status. It is believed that this presentation helps to bring the relationship between the relevant profile and case processing factors into clearer focus.

Table 2: Chronic Recidivism Rates for 1987 Initial Referral Cohort

	<u>All Initial Referrals</u>			<u>Wards Only</u>		
	15 or less (N=849)	16 or older (N=2266)	Total Referrals (N=3115)	15 or less (N=221)	16 or older (N=683)	Total Wards (N=904)
	27%	73%	100%	24%	76%	100%
% Chronic Recidivist	17%	5%	8%	32%	8%	14%

by:

Gender

• Male	17%	6%	9%	31%	10%	15%
• Female	14%	2%	5%	33%	3%	10%

Ethnicity

• Caucasian	15%	4%	7%	31%	6%	12%
• Hispanic	19%	6%	11%	33%	12%	18%
• Other/Unknown	17%	4%	8%	32%	8%	15%

Referral Offense

• Felony	20%	6%	10%	35%	9%	16%
• Misdemeanor	14%	4%	6%	27%	7%	12%

The most significant Table 2 finding is that younger minors -- whether looking at the total study group or those who subsequently became wards of the Juvenile Court -- had much higher rates of chronic recidivism than their older counterparts. This finding held true for both males and females, misdemeanants and felons and all ethnic groups -- there were no notable exceptions.

Additionally, with very few exceptions, minors who were made wards of the Juvenile Court had higher rates of chronic recidivism than those in their corresponding larger referral grouping (i.e., including those whose cases were closed, dismissed, transferred or handled informally). This finding holds true for all categories of younger minors. While the differences based on wardship status were less pronounced for older minors, the same trend was noted, except for older females, who had the lowest rates of chronic recidivism based on the factors presented in Table 2.

A particularly surprising finding was that the chronic recidivism rate for first-time wards age 15 or less (32%) was four times as great as that for first-time wards age 16 or older (8%); and, that the chronic recidivism rate of younger first-time wards did not differ significantly based on gender, ethnicity or referral offense (3). This finding would appear to have significant implications for program development purposes and, therefore, was targeted for further exploration.

One possible interpretation of the findings presented in Table 2 could be that the "system" does something to younger wards, in particular, that causes them to do worse than either their older counterparts or those who do not come under the system's "influence" at such an early age. On-going analysis of departmental case processing data and the numerous case studies conducted by departmental research staff caused the authors to reject this interpretation. There have been no systematic differences noted in the handling of younger vs. older wards that would explain the highly significant differences in outcome reported in Table 2.

A second possible explanation of the Table 2 findings is that, since the initial recidivism analyses looked only at subsequent juvenile referrals, older minors did not have an equivalent chance to recidivate. Based primarily on prior juvenile program evaluation efforts conducted by Probation research staff in which minors were followed into the adult system, the authors did not assign much credence to this alternate explanation -- especially when the differences in chronic recidivism rates for older and younger wards were found to be so different. (Older wards who continue to violate the law are frequently continued under the Juvenile Court's jurisdiction well beyond their 18th birthdays.) However, this issue was targeted for additional evaluation in the next study phase.

- (3) Although younger first-time Wards with misdemeanor referral offenses had a somewhat lower rate of chronic recidivism (27%) than those initially referred on felony allegations (35%), these differences disappeared when looking at the sustained offense level(s).

An alternate and more plausible explanation from the authors' perspective is that there are additional kinds of differences between older and younger minors who become wards (as well as between the chronic recidivists in our study vs. the non- or low rate recidivism groups) that serve to further explain and clarify these outcome differences. Based on the authors' prior work in the area of juvenile offender risk assessment, it was hypothesized that the presence (or absence) of a multi-problem profile would explain most of the additional variance.

To test this hypothesis, a sample of 70 minors was randomly selected from each of the study groups in the 1987 Initial Referral cohort. This sample initially represented 4% of the non-recidivist, 11% of the low rate recidivist and 29% of the chronic recidivist study populations. (4)

In drawing this representative sample (See Appendix A for additional details), the analytic goals were two-fold.

1. To test our hypotheses that:

- a. The chronic recidivist group would have a higher average number of problems at the point of initial referral than the non- or low rate recidivist groups, independent of the minor's age or subsequent wardship status;
- b. Younger minors who recidivate -- whether low rate or chronic recidivists -- would have a higher average number of problems at the point of initial referral than their older counterparts. (Again, we expected this would be true of wards and non-wards, alike.)

To accomplish this goal required gathering additional profile information for each of the sample cases from juvenile probation casefiles.

2. To obtain better information on what it is costing us now to deal with the "8% problem," and its potential impact on the adult system. (We believed that a majority of these chronic juvenile offenders continue to commit crimes as young adults.)

To accomplish this goal required the collection of three years of additional offense tracking data on each of the sample cases, for a total of 72 months per case. Cases were tracked not only for referrals to the juvenile system, but for subsequent arrests/convictions as adults. (5)

-
- (4) It was our intent in drawing this sample to oversample the chronic recidivist group in order to have a sufficient number of cases for comparative analyses.
- (5) This additional 36 months of case follow-up was both necessary and beneficial for validating our initial group assignments. The fact that there is a statewide system for reporting adult offenses greatly facilitated this effort.

In developing the data collection instrument for this second study phase, "problem" categories from our Juvenile Offender Risk Assessment instrument were included as well as others which a review of the literature indicated might assist in better predicting chronic recidivism with a "front end" referral population. The data collection instrument was also designed to investigate subsequent case processing decisions having a bearing on system costs and several issues of importance in the design of "8% problem" solutions (See Appendix B).

The data collection instrument was pre-tested to ensure the general availability of the desired information and to refine the variable definitions. Both authors participated in all data collection and analysis phases.

In the first data analysis phase, a number of adjustments were made to the original study sample groups. (These are described in greater detail in Appendix A.) Suffice it to say here that these adjustments fell into two broad categories, by intent.

1. To improve the accuracy of the planned data analyses (i.e., when subsequent review of the casefile and/or adult case tracking information revealed that the initial group assignment was incorrect.) (6)
2. To improve the utility of the planned analyses for program development purposes. (This primarily involved the removal of cases in which the minor lived out-of-county, both before and after the initial referral.) (7)

The adjusted sample totaled 171 cases -- 36 non-recidivists, 58 low rate recidivists and 77 chronic recidivists. A Chi-square analysis identified six problem variables which generated highly significant differences across the three study groups partitioned on the basis of recidivism rates, as follows.

-
- (6) As anticipated (ref. Page 9), the tracking of the sample study cases into the adult system did not produce any major shifts in study group alignment or chronic recidivism rates for any major profile grouping i.e., the low rate and chronic recidivist groups increased by 3% and 4%, respectively, and the non-recidivist group decreased by 7%.
 - (7) A higher proportion of the non- and low rate Orange County recidivists were Out-of-County cases (35% and 16%, respectively) vs. the chronic recidivist group, where only 6% of the cases live out-of-county.

Table 3: Significant Individual Problem Variables for 1987
Initial Referral Sample Study Groups (8)

% of Total With Problem	Non-Recidivist (1 Referral Only) (N = 36)	Low-Rate Recidivist (2-3 Referrals) (N = 58)	Chronic Recidivist (4+ Referrals) (N = 77)	Total Referrals (N = 171)	(Significance Level) (9)
Significant Family Problems	17%	21%	52%	34%	$X^2=20.5, DF=2$ ($p<.001$)
School Attendance/ Behavior Problems	22%	45%	75%	54%	$X^2=30.7, DF=2$ ($p<.001$)
School Performance Problems	17%	42%	67%	48%	$X^2=26.9, DF=2$ ($p<.001$)
Parental Monitoring/ Control Problems	36%	41%	65%	51%	$X^2=11.3, DF=2$ ($p<.005$)
Chronic Runaway Behavior	8%	7%	27%	16%	$X^2=12.2, DF=2$ ($p<.005$)
Stealing Pattern of Behavior	6%	19%	38%	25%	$X^2=15.1, DF=2$ ($p<.001$)

Not surprisingly, four of the six significant problem variables appear on the current Orange County Probation Department Juvenile Offender Risk Scale -- School Attendance/Behavior problems, School Performance problems, Parental Monitoring and Control problems and Runaway Behavior. An additional factor -- Significant Family problems -- is on our current Juvenile Offender Needs Assessment scale. (10) The only problem variable which showed a high level of individual discriminant power that is not currently included in the Department's classification process is a Pattern of Stealing Behavior.

- (8) 1987 sample of minors with their first ever referral to the Orange County juvenile justice system via an application for petition. Includes in-county cases only.
- (9) Selected level of significance = $p<.01$.
- (10) The Orange County Probation Department case classification process includes the use of two instruments. One is the Risk Assessment scale described in earlier sections of this report. The other is a Needs Assessment scale. The former assesses the risk of re-offending. The latter was developed to assess deputy time demands. The two are used in combination to determine supervision level.

The six problem variables presented in Table 3 were initially utilized to test the authors' hypothesis that the chronic recidivist group would have a higher average number of problems at the point of their initial system referral than the non- or low rate recidivist groups as well as the hypothesis that, among minors who recidivate -- whether low-rate or chronic -- younger minors would present a higher average number of problems at the point of their initial system referral than their older counterparts.

Testing these hypotheses was the central reason for drawing the study sample, in that confirmation or refutation of the authors' hypotheses would have significant implications for the development of any potential "8% problem" solutions. The results of these analyses are presented below.

Table 4: Average # of Significant Problem Variables for 1987 Initial Referral Sample Study Groups, controlling by Age and the Minor's Subsequent Wardship Status (11)

	Non-Recidivists (1 Referral Only) (N = 36)	Low Rate Recidivists (2-3 Referrals) (N = 58)	Chronic Recidivists (4+ Referrals) (N = 77)	Total Study Sample (N = 171)
<u>Age</u>				
•15 or less	1.27	2.16	3.74	3.01
•16 or older	.96	1.54	2.39	1.64
<u>Subsequent Wardship Status</u>				
•Ward	.96	1.62	2.70	1.92
•Non-Ward	.44	1.16	2.22	1.55
<u>Total Study Sample</u>	<u>1.06</u>	<u>1.74</u>	<u>3.25</u>	<u>2.28</u>

(11) 1987 sample of minors with their first ever referral to the Orange County juvenile justice system via an application for petition. Includes in-county cases only.

The findings presented in Table 4 clearly indicate that, as anticipated, chronic recidivists (regardless of their age or wardship status) have a higher average number of problems correlated with a higher risk of re-offending than the non- or low rate recidivist groups, at the time of their first system referral.

- The average number of problems for the chronic recidivist group is nearly three times that of the non-recidivist group and almost twice that of the low rate recidivist group.

When the study sample is further partitioned on the basis of age or subsequent wardship status, the Table 4 findings indicate that:

- Younger minors (age 15 or less), regardless of their recidivism status, have a higher average number of problems correlated with a higher risk of re-offending than minors age 16 or older, at the time of their first system referral -- these differences being greater, as anticipated, among those minors who recidivated.
- Minors who became wards subsequent to their initial system referral generally present a higher average number of problems correlated with a risk of re-offending than those whose cases were either dismissed or handled informally, regardless of their recidivism status.

Based on the findings presented in Tables 2, 3 and 4 coupled with the authors' prior work in developing the Orange County Probation Department's Juvenile classification instruments, it was concluded that:

By combining the factors of Age at the first System Referral, the minor's Subsequent Wardship Status and the presence or absence of a Multi-Problem profile, a highly significant proportion of the chronic juvenile offenders in Orange County could be accurately identified and targeted for early intervention.

Collection and analysis of the 1987 Initial Referral Cohort sample study data enabled the authors to evaluate the relative strength and reliability of various factors and combinations of factors known to be correlated with either juvenile offender recidivism and/or chronic recidivism rates. From review of the literature and the authors' experience with the data, the following issues were identified as important in selecting factors for the purposes of the next set of analyses aimed at target population definition for program development purposes.

1. To select the best individual predictors of outcome for the target population -- in this case, the prediction of chronic recidivism for an initial system referral population.
2. To use a composite of the best factors. (The use of multiple factors is generally twice as good as the use of individual factors, for increasing predictive validity.)
3. To be careful with factor definition, to focus more on the frequency of important events (quantitative data) than their "seriousness" (qualitative data).

4. To, wherever possible, select measures that can be verified by multiple sources, based on multiple observations.

With these criteria in mind, during the next analysis phase, four composite factors were created for testing with not only the sample study cases but a larger data set consisting of first-time wards from the same time period. (12)

In creating these composite factors, the authors utilized not only the six problem variables identified in Table 3 but four others, as follows: Criminal Family members, Prior Petitions Filed alleging Child Abuse/Neglect, Substance Abuse and Gang membership. These four variables did not produce statistically significant differences across the three sample study groups. However, further investigation caused the authors to conclude that they should be retained for factor development purposes, in that:

- There were "process" problems identified with some of these variables i.e, one cannot obtain accurate information on these variables when relying solely on what is generally known at the time of the initial system referral (i.e., utilizing Intake/Investigation documents only).
- They capture an important problem dimension which, while small in terms of their relative base rates of occurrence, have significant casework implications.
- They have been found to produce statistically significant differences, in terms of recidivism rates, in other study efforts which utilized larger data bases and better assessment tools.

The following describes the "problem" factors recommended by the authors for use in identifying high risk minors at the time of their initial system referral, in association with the minor's age (i.e., 15 or younger) and subsequent wardship status (i.e., ward).

1. School Behavior/Performance Factor

This problem factor consists of three individual measures. (A "Yes" on any measure would count as a "problem" in this area.)

- o Attendance Problems
(Truancy or a pattern of "skipping" school for certain classes or at certain times of day)
- o Behavior Problems
(Recent suspensions or expulsion)
- o Poor Grades
(Failing one or more classes)

(12) This data set was originally extracted from the larger Juvenile Profile/Outcome database maintained for all Juvenile Court wards assigned to probation field supervision caseloads in Orange County. This particular management information system component has been in place since 1987 (ref. Pg. 2).

2. Family Problem Factor

Four individual measures were aggregated to create this factor, each addressing a somewhat different problem dimension. (Once again, a "Yes" in any one area would count as a Family problem.)

- o Poor Parental Supervision/Control
(Parents do not know where the minor goes, what (s)he does or with whom and have little/no influence in such matters.)
- o Significant Family Problems
(Illness, substance abuse, recent trauma, major financial problems, marital/family discord or other significant family stressors)
- o Criminal Family members exerting a negative influence on the minor.
- o Documented Child Abuse/Neglect
(Dependent child status or recent petitions filed on the minor's behalf)

3. Substance Abuse Factor

This includes the use of alcohol or drugs by minors in any way but "experimentation." A review of the sample study cases indicates that many minors have significant alcohol or drug problems that go undetected and untreated for too long. Additional efforts need to be made to obtain reliable data on this factor at an earlier point in the minor's period of wardship supervision. Further, the recommended substance abuse "problem" definition for juveniles (i.e., anything other than "experimentation") requires additional testing.

4. Delinquency Factor

Three individual measures were included here. Each appears to be associated with a somewhat different criminal pathway, in terms of early onset. (A "Yes" on any one measure qualifies as a problem in this area.)

- o A Stealing Pattern of Behavior
- o A Runaway Pattern of Behavior
- o Gang Member/Associate

The proposed Multi-problem factor definition -- 2 or more of the problem factors as defined above -- was initially tested using the 1987 Initial Referral Study sample.

The results of this analysis for the sample study groups partitioned on the basis of recidivism rates are presented below.

Table 5: # of Composite Problem Factors for
1987 Initial Referral Sample Study Groups

	Non-Recidivists (1 Referral Only) (N = 36)	Low Rate Recidivists (2-3 Referrals) (N = 58)	Chronic Recidivists (4+ Referrals) (N = 77)
<u>Avg. # of Problems</u>	<u>.83</u>	<u>1.33</u>	<u>2.47</u>
<u>% of Minors with "N" Problem Factors</u>			
0	47%	29%	1%
1	28%	29%	22%
2	19%	24%	26%
3	6% } 25%	14% } 42%	30% } 77%
4	0%	4%	21%

Chronic vs. Non-Recidivists $X^2 = 25.3$ DF = 1, $p < .001$
Chronic vs. Low Rate Recidivists $X^2 = 15.9$, DF = 1, $p < .001$ (13)

This analysis clearly indicates that chronic recidivists have a higher average number of composite problem factors than the non- and low rate recidivists. (Chart 2, Appendix C, presents the same data, further partitioned on the basis of age.)

This combination of factors, for the sample study groups, correctly identified 70% of the chronic recidivists, with 19% False positives and only 11% False negatives (Chart 3, Appendix C).

- o For the younger sample study cases, the four composite factors correctly identified 77% of the chronic recidivists, with 13% false positives and 10% false negatives.
- o For the older sample study cases, these four factors correctly identified 64% of the chronic recidivists, with 25% false positives and 11% false negatives.

It would appear that the four composite factors provide a high degree of accuracy in correctly identifying those younger minors who present the greatest risk of becoming chronic juvenile recidivists within Orange County's initial system referral population. Adding in the factor of the minor's subsequent wardship status (i.e., dealing with first-time wards only) would be expected to further increase the accuracy of such predictions.

13) Selected level of significance = $p < .01$. For statistical analysis, the number of problem factors were collapsed into two groups. The first group includes 0 or 1 problem factor while the second group includes 2 or more problem factors.

Two problem areas are believed to primarily account for the lower level of accuracy in predicting chronic recidivism among older minors at the time of their initial system referral, utilizing the proposed Multi-Problem factor definition.

1. Substance Abuse appears to be the most important problem factor for chronic recidivists who are age 16 or older at their initial system referral -- a factor which does not have a high degree of validity/reliability at the initial referral stage. This is particularly true when utilizing profile data from Intake/Investigation sources only.
2. School Behavior/Performance data needs to be supplemented, for older minors, with better information on the minor's alternative education or job training experience and work record.

The 1987 Referral Cohort Study sample provided valuable information regarding the relationship between the identified problem factors, the minor's age and subsequent wardship status and chronic juvenile offender recidivism rates. One limitation, particularly as related to the "Multi-problem" factor testing, was the size of the study sample. Therefore, before moving ahead to develop intervention strategies for first time wards with the identified high risk profiles, the authors felt the need to "test" the predictive accuracy of the recommended target population "eligibility criteria" with a larger sample of first-time wards.

A total of 905 cases were identified which met the criteria for this analysis i.e., first-time wards in 1987, with the requisite data available from both the Juvenile Profile/Outcome data base and the 1987 Initial Referral tracking study. (14)

Although the 1987 Initial Referral sample study analyses could not be precisely replicated, all but two of the problem variables used to create the four composite problem factors were available in the Juvenile Profile/Outcome database. The two "missing" variables were Criminal Family members and a Stealing Pattern of Behavior, the latter being the most important of the two from a discriminate perspective.

The most serious limitation in using the Juvenile Profile/Outcome data base for this "testing" purpose is the difference in the Age Factor definitions between this data set and the 1987 Initial Referral study sample. The Age factor in this latter data base is defined as "Age at the first-ever system referral." The Age factor in the larger First-time Ward data set is defined as "Age at Initial Risk Assessment." The time between initial system referral and initial case assessment by a field supervision officer (subsequent to Probation Intake and Court processing) can be substantial, but is generally not less than 90 days. As

(14) Appendix A provides more detailed information regarding the matching of cases between the Juvenile Profile/Outcome database and the 1987 Initial Referral Cohort.

a result, we could not reliably replicate the composite problem factor analyses conducted utilizing the sample study cases partitioned on the basis of age at initial system referral.

Table 6, below, presents the results of the analyses utilizing the First-Time ward data set.

Table 6: # of Composite Problem Factors for 1987
First-time Ward Data Set (N = 905) (15)

	Non- Recidivists (1 Referral Only) (N = 450)	Low Rate Recidivists (2-3 Referrals) (N = 315)	Chronic Recidivists (N = 140)
Avg. # of Problems	.99	1.42	1.85
% of Minors .. with "N" Problem Factors			
0	38%	18%	8%
1	35%	39%	28%
2	18%	26%	36%
3	8% > 27%	15% > 43%	24% > 64%
4	1%	2%	4%

Chronic vs. Non-recidivists $X^2 = 57.9, DF = 1, p < .001$
Chronic vs. Low Rate recidivists $X^2 = 14.7, DF = 1, p < .001$

This analysis indicates that chronic juvenile recidivists have a higher average number of problems than the non- or low rate recidivist groups at their initial case assessment. Considering the differences in the two data sets (i.e., the First-time ward data set and the 1987 Initial Referral Cohort and/or study sample), the overall study results are quite comparable. The following appear to be the most noteworthy similarities and differences.

- Utilizing either the 1987 Initial Referral Cohort data for wards only (Ref. Table 2, Page 8) or the First-Time Ward data presented in Table 6 (above), a comparable proportion of first-time wards (14-15%) become chronic juvenile recidivists.

(15) Level of significance selected = $p < .01$. For statistical analysis, the number of problem factors was collapsed into two groups. Group 1 includes those with only 1 problem factor while Group 2 includes those with 2 or more problem factors.

2. As with the sample study cases, there is a consistent linear relationship between the average number of problem factors and juvenile offender recidivism rates, with chronic recidivists having the highest average number of problems at the time of their initial system referral.
3. When utilizing the 1987 Initial Referral study sample, the average number of problems for the chronic recidivist group (2.7) was found to be higher than for the 1987 First-time Ward population (1.85). This finding is believed to be a result of:
 - a. The two "missing" variables in the First-time Ward data set (i.e., Criminal Family members and a Stealing Pattern of Behavior).
 - b. Differences in variable definitions between the two data sets.
 - c. A problem with accurate identification and assessment of the Substance Abuse factor at the point of the initial referral vs. at the time of the initial case assessment for field supervision purposes.

For the first-time ward data set (N = 905), the recommended four composite problem factors correctly identified 66% of cases as non,-low rate or chronic recidivists, even with the data base differences noted above (Chart 4, Appendix C). From this entire set of analyses, the authors conclude that the use of uniform problem definitions, coupled with timely efforts to obtain verified information from multiple sources on the composite problem factors, will:

1. Significantly improve the accuracy of Departmental efforts to identify those minors -- particularly, younger first time wards -- at greatest risk of becoming chronic juvenile offenders in Orange County.
2. Enable the Orange County Probation Department to design more cost-effective early intervention programs for high risk youth.

For Orange County's younger, first-time ward population, the recommended strategy is one of risk reduction through a more intensive focus on solving the types of problems which this study effort has demonstrated are highly correlated with chronic juvenile offender recidivism rates. However, despite the authors' optimism regarding the potential for improving Orange County's "system batting average," a few notes of caution appear to be warranted.

1. While there appears to be more than adequate justification for targeting younger minors with multiple problem profiles (as defined in this study effort) for the design of new programs and service delivery strategies aimed at improved program outcomes (i.e., a reduction in chronic recidivism rates), we do not as yet have proof that the recommended strategies will work any better than those currently employed. (This will be the goal of the recommended follow-on study effort.)

2. There appears to be an ample number of cases for program design and testing purposes, utilizing those cases for which the Probation Department already has a mandate from the Juvenile Court to take appropriate risk control/reduction actions. (We do not need to "widen the net.")

Turning to the question of what it is costing us now to deal with the "8% problem" and its potential impact on the adult system, the 1987 Initial Referral sample study cases were tracked for six years subsequent to their original application for petition. Table 7 (see next page) presents these somewhat astounding study findings.

The findings presented in Table 7 indicate that Orange County's chronic juvenile recidivists are a major resource consumer.

- During the six-year tracking period, the Orange County Courts formally handled these "8%" minors an average of eight (8) times -- six (6) times as juveniles and two (2) times as adults.
- Over half of the chronic recidivist group (53%) had both juvenile and adult records during the six-year tracking study.
- Averaging nearly 20 months in custody during the six-year tracking period and considering custody costs alone, "8%" minors cost the taxpayers of Orange County over \$44,000 each (588 days X \$75/day = \$44,100 per "8%" minor).
- The authors project there are an average of 500 new "8% problem" cases added to the criminal justice system in Orange County each year.

Table 7: Results of Six-Year Individual Case Tracking for 1987 Initial Referral Sample Study Groups.

6 yr. Tracking Measure (J=Juvenile; A=Adult)	Non-Recidivists (1 Referral) (N = 36)	Low Rate Recidivists (2-3 Referrals) (N = 58)	Chronic Recidivists (4+ Referrals) (N = 77)
Avg. # of J Petitions	1.1	2.4	6.0
Avg. J Commitment Time	1.4 months	1.4 months	13.9 months
% with Any J Commitments	28%	47%	88%
Avg. # of A Arrests	.16	.46	1.7
Avg. A Commitment Time	1.1 months	11.3 months*	5.7 months
% with Adult Record	6%	26%	53%
% with Any A Commitments	6%	7%	33%
Avg. Total J Petitions/ A Arrests	1.3	2.9	7.7
Avg. Total Commitment Time (J & A)	2.5 months	12.8 months*	19.6 months
% with Any Commitments (J & A)	31%	50%	90%

* Includes one adult commitment of 19,440 days.
(Removal of this one commitment would reduce the Avg. number of commitment months to 1.6.)

D. Study Implications

From this entire exploratory research project, it seems reasonable to conclude that:

1. It may be possible to significantly reduce the number and proportion of chronic juvenile recidivists in Orange County through a coordinated program of proactive and aggressive early intervention and treatment of young, high risk juvenile offenders and their families.

The goal of such efforts should be to break the escalating pattern of criminal and anti-social behavior which leads to chronic delinquency and, too often, adult criminal careers.

2. A lack of verified information essential for valid juvenile offender risk prediction at key points in the Orange County juvenile justice system's handling of high risk youth (rather than a lack of knowledge or consensus on the key risk factors) negatively impacts overall system effectiveness.

Significant improvements in the validity and reliability of our juvenile risk prediction procedures can be achieved through the development of improved information sharing and networking techniques among the youth-serving agencies of Orange County and the component parts of the juvenile justice system.

3. Each city/community in Orange County needs to become involved in helping high risk families to provide higher levels of supervision, structure and support to their needy youngsters.

Over half of the families of the chronic juvenile recidivists included in this study effort have significant problems which impede their ability to be effective parents. Cooperative, concerted efforts to empower and build these families up may pay major dividends for years to come to the safety and productivity of our communities.

4. Even a modest reduction in recidivism rates for the "8% Problem" group could result in major savings for the Orange County criminal justice system, on a long-term basis.

These exploratory study findings suggest that more than half of Orange County's criminal justice system resources -- both adult and juvenile -- may be tied up with the "8% problem." (There appears to be significant room for improvement.)

II. TOWARD THE DEVELOPMENT OF "8% PROBLEM" SOLUTION(S)

When the Probation Department first realized that a small proportion of juvenile offenders (8-10%) was potentially responsible for over half of Orange County's criminal justice system workload, an in-house team of juvenile operations staff and managers (called the Juvenile Systems Task Force) began to examine possible programs to address this serious problem.

In the spring of 1993, the Orange County Probation Department was awarded a National Institute of Corrections (NIC) Program Development grant which provides technical assistance from NIC and Temple University staff to design and develop an "8%" intervention project. This grant also involves a collaborative effort with Los Angeles County Probation staff who hope to conduct their own "8%" baseline research and pilot program development effort, in association with staff from Orange County.

In August, 1993, the Probation Department's Juvenile Systems Task Force was expanded to include representatives from mental health, social services, drug and alcohol services and education in the County of Orange. Also included was a representative from a newly formed non-profit organization called the Probation Community Action Association. (One of this organization's goals is to make private resources available to assist the Probation Department in solving the "8% problem.")

For the past seven months, the expanded Juvenile Systems Task Force has been meeting on a weekly basis to develop and coordinate the pilot project plans. What this task force currently envisions is a coordinated program of proactive and aggressive early intervention and treatment for young, high risk juvenile offenders and their families. The goal is to break the escalating pattern of criminal and anti-social behavior which leads to chronic delinquency and, too often, adult criminal careers.

While the program design effort is not as yet complete, this report section is intended as an overview of the proposed "8% Problem" Solution; particularly, what the Task Force has identified in the way of key design concepts. These concepts were developed by the expanded Juvenile Systems Task Force subsequent to:

1. A thorough review and discussion of the "8% problem" study findings;
2. A literature search to identify program factors significantly correlated with successful intervention efforts with similar high risk juvenile offender populations;
3. Many weeks of discussion and "practice" case staffings to identify critical program development resources.

To further refine these resource requirements and ensure access to needed treatment services, the participating agencies have agreed to work together over the next several months to identify and assess the needs of a limited number of minors and their families, to test the current collaborative capabilities and to identify critical needs for new program resources.

The following represents a partial list of resources that need to either be developed or expanded prior to initiation of the formal pilot project.

- The capability to provide the needed mental health services for minors and their families. (16)
- Access to the types of educational and mental health assessments that are currently reserved for the very time-consuming Special Education assessment process. (17)
- The identification of appropriate office space in the target area -- not identified with any particular agency -- where the team members can begin to work together and build the new program's "identity."
- Building the professional and volunteer resource capability to provide the following types of family preservation services: in-home counseling services, teaching home-makers, in-home parental aides, daycare, respite care, public health services, and individual tutors or mentors for minors and their families.
- The creation of a "discretionary" fund to enable the program to obtain important resources for emergency assistance, motivation and reinforcement of progress (rewards) and to meet critical family maintenance/support requirements not generally available through other sources.

To date, the expanded Juvenile Systems Task Force has achieved consensus on the pilot project goals, target population, service delivery area, case identification process and assessment tools as well as the program and service delivery concepts which follow.

The goal of this new Orange County collaborative is to implement the proposed pilot project in three cities of the county, as early in 1994 as all of the critical program resources can be put into place.

PILOT PROJECT ELIGIBILITY CRITERIA

The first and perhaps most important design concept is the program's focus. This program is not for everybody. The focus will be on younger minors (age 15 years and under) who:

- Have been declared wards of the Juvenile Court, to be supervised by the Probation Department; and,
- Have been assessed and found to have the constellation of profile factors -- individual, family and environmental -- that place them at significantly greater risk of becoming chronic juvenile and/or adult offenders.

(16) The resources currently available from the Dept. of Mental Health to treat any minors other than those who meet the State's definition of Serious Emotionally Disturbed minors or qualify for Special Education programming are severely limited.

(17) Unless the minor is subsequently placed in a Special Education program, the resources to provide the recommended services may not be available.

Key elements in determining a minor's eligibility for participation in the pilot project will be:

- The parents inability to effectively discipline, encourage, and supervise their children.

The families of high risk youthful offenders will generally exhibit significant deficits in one or more of these areas. Further, over half of the families included in the pilot project are expected to have significant problems which, if not ameliorated, will negatively impact their ability to benefit from counseling, parent effectiveness training or other efforts directed toward improved family functioning.

- The minor's poor school performance, particularly the inability to benefit from school attendance/participation, academically and/or socially.

At least three quarters of the pilot project participants are projected to have school attendance, behavior and/or performance problems of one type or another. Given the relatively younger age of the target population, most will still be "in school," despite the presence of significant performance issues.

- The minor's inappropriate choice of friends and activities, including any substance abuse on the part of the minor.

The old adage "birds of a feather flock together" appears to be true from either a pro- or anti-social perspective. Most of the high risk minors targeted for intensive intervention efforts under this pilot project will have more than a passing degree of interest/involvement in substance abuse, gangs or other equally dangerous activities.

RECOMMENDED INTERVENTION STRATEGIES

Given the above description of the target population, the following are believed to be key components of an effective intervention strategy for high risk minors and their families.

1. The program will provide adequate levels of supervision, structure and support to minors and their families, both during and subsequent to the intervention/treatment process, to:
 - Ensure protection of the minor, his/her family and the community;
 - Facilitate the development of new patterns of thinking and behavior; and,
 - Eliminate any obvious "stumbling blocks" to the minor and family's progress.

RECOMMENDED INTERVENTION STRATEGIES (cont'd.)

2. The program will require accountability on the part of minors for their actions, while helping them to develop greater awareness of and sensitivity to the impact of their actions on both the people and situations around them.
3. The program will assist families in their efforts to ensure that minors are attending school regularly and in the development of effective strategies for attaining and reinforcing educational success.
4. The program will promote the development of pro-social values, behavior and relationships through the provision of:
 - Opportunities for minors to directly help people and improve conditions in their respective communities;
 - Greater access and exposure to positive adult and juvenile role models; and,
 - Positive leisure-time activities which are complimentary to each minor's interests, skills and abilities.
5. The program will develop and promote individualized intervention strategies. Important aspects of this individualized programming will include:
 - Delivery of services in close proximity to the minor/family's home to encourage easy access to treatment and program participation.
 - Community case advocates to assist in building bridges of trust, communication and understanding between the minor, the family and all treatment/intervention agents.
 - A continuum of care with strong follow-up services that continue to be available to the minor/family as long as they are needed -- not just on a "crisis" basis.
6. The program will require a strong commitment to teamwork on the the part of all treatment/intervention agents involved in the pilot project -- the family, the "professionals" and any community volunteers.
 - An important goal of the program will be the empowerment of the family to recognize and, ultimately, to solve the problems related to their minor's criminal behavior. To do this successfully, they must be an integral part of the treatment team and process.
 - The program will need to draw on the professional knowledge, skill and experience of many treatment disciplines. Consequently, the creation of a multi-agency, multidisciplinary team is deemed critical to the success of the pilot project.

RECOMMENDED INTERVENTION STRATEGIES (cont'd.)

- The program will require strong support from the local community in the form of:
 - Tutors and mentors;
 - Specialized skills and services;
 - Help in developing new programs and recreational resources;
 - Other equally critical needs such as: transportation, childcare and emergency assistance.

PROGRAM EVALUATION

A formal research component is planned, utilizing an experimental research design and random assignment. While the research project will be carried out by staff assigned to the Orange County Probation Department, a research advisory group consisting of a multidisciplinary team of research professionals will be created to provide both input into the research design and independent scrutiny of the research process/ findings. Efforts have already begun to identify the advisory group members and to obtain funding to support their participation for a minimum of three years.

For additional information or feedback regarding either the research effort described in this report, the pilot project plans or the proposed follow-on study effort, please write:

Gwen A. Kurz, Director, Program Planning and Research Division, Orange County Probation Department, 909 No. Main Street, Santa Ana, California 92701 (or call (714) 569-2140).

III. Study Limitations/Areas for Additional Study

As with any study dealing with risk prediction, the extent to which these exploratory study findings and conclusions may be generalized to other jurisdictions of comparable size and demographic make-up (much less those which are non-comparable) is an issue that should be approached with caution.

Relative to the Orange County recidivism analyses presented in Table 1 (page 6), pages 3 and 5 offer additional support for the potentially greater generalizability of these particular study findings. However, work with the 1987 Initial Referral sample study caused the authors to conclude that the actual proportions of low rate and chronic recidivists may be somewhat higher than originally reported (see Appendix A).

A number of other jurisdictions in California are utilizing the Orange County Probation Department's recidivism analysis methodology to see what they come up with in terms of non-, low rate and chronic recidivist groups. This is, in fact, part of a current technical assistance grant jointly awarded by the National Institute of Corrections to the Orange and Los Angeles County Probation Departments to assist in the design of potential "8% problem" solution(s) in these two counties.

The specific risk factors that will be utilized in the development of the Orange County pilot intervention project and case identification procedures are comparable to those which other researchers have found to be significantly correlated with a higher risk of re-offending. They have nonetheless been specifically developed to accurately identify the youth in Orange County's juvenile justice system referral and/or ward population that are in need of a high level of resource coordination and focus.

Additionally, most of the proposed risk assessment variables have been validated and re-validated with various juvenile offender populations in Orange County over the past ten years. Thus, the goal of the 1987 Initial Referral sample data analyses was not to create a new risk scale, but to confirm that the sample study cases conformed to the anticipated variable distribution patterns.

The recommended focus of the proposed pilot project aimed at improving Orange County's "system batting average" with chronic juvenile recidivists is, as previously stated, younger, first-time wards in Orange County who present a multi-problem profile at the time of their first (or, second) system referral. This is primarily because, based on the Orange County data analyses, this group currently has the highest rate of chronic recidivism. However, the authors wish to emphasize that we do not advocate nor do any of our study findings support any type of punitive action or the exercise of a higher level of control over the minor's actions based on the recommended target population criteria, than those already mandated or authorized by the Court in each individual case.

Further testing of the recommended "8%" case identification procedures is needed, to refine the current estimates of the number of new "8%" minors that the system can be expected to receive in coming years.

System cost estimates also need to be refined, utilizing measures other than custody time savings. In developing the pilot project program evaluation plans, consultation with the County Administrative Office and other juvenile justice system professionals will take place, to more fully address this important measure of project impact.

As time permits, the authors will review and potentially supplement the current study data for older, first-time wards who become chronic recidivists. The analyses conducted to date indicate that Substance Abuse may be the most significant factor in the "late" onset of a chronic pattern of re-offending.

From the case study portion of this study effort, the authors were impressed with what appears to be a link between younger minors whose profile at initial referral includes a pattern of runaway behavior and child abuse/neglect. Unfortunately, this latter issue is often not recognized (nor, does it come to the system's attention) until years after the initial system referral; however, minors subsequently report it as a long-standing issue, related to their earlier runaway episodes. This area is one that has been recommended for closer attention in the design of the pilot project case assessment, service delivery and follow-on study plans.

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Gwen Kurz
Santa Ana, California
(February, 1994)

APPENDIX A

Methodology

- Step 1: Identify the research objectives and the research questions to be answered. This step involves a thorough review of the literature and the identification of the gaps in the knowledge that the research aims to fill. The research objectives and questions are then formulated and the research design is developed.
- Step 2: Select the research methodology and the data collection methods. This step involves the selection of the research methodology (qualitative, quantitative, or mixed methods) and the data collection methods (interviews, focus groups, surveys, etc.). The selection of the methodology and data collection methods is based on the research objectives and questions.
- Step 3: Collect the data. This step involves the collection of the data according to the research methodology and data collection methods selected in Step 2. The data collection process is monitored and controlled to ensure the quality and reliability of the data.
- Step 4: Analyze the data. This step involves the analysis of the data using appropriate statistical or qualitative analysis techniques. The analysis is aimed at identifying the patterns and relationships in the data and answering the research questions.
- Step 5: Interpret the results and draw conclusions. This step involves the interpretation of the results of the analysis and the drawing of conclusions based on the findings. The conclusions are then compared with the research objectives and questions to determine the extent to which they have been answered.

A. 1987 Initial Referral Cohort Study Sample Selection

The study sample was selected from a six month cohort of all minors referred to the Orange County Probation Department via an application for petition for the first time whose case dispositions occurred between the months of January and June, 1987 (N = 3164). This entire cohort was initially tracked through December, 1989 -- an approximate 30 month follow-up period -- to identify all subsequent re-referrals in Orange County. The cohort was divided into three sub-groups stratified according to the number of times minors were re-referred to the Probation Department during the follow-up period.

The first study group included those minors who had only one application for petition during the follow-up period. This group accounted for 71% of the cohort (2234 of 3164) and is referred to as the Non-Recidivist study group.

The second study group (677 of 3164) consisted of minors who had 2 or 3 applications for petition during the follow-up period. This group comprised 21% of the study cohort and accounted for 45% of all re-referrals during the follow-up period. This group of minors is referred to as the Low Rate Recidivist group.

The third and final group included all minors with 4 or more applications for petition during the follow-up period and is referred to as the Chronic Recidivist (or, "8% problem") group. These minors comprised only 8% of the study cohort, but accounted for 55% of all re-referrals during the follow-up period.

There were five additional steps involved in acquiring the final study sample, once the 1987 study cohort had been partitioned into the three study sub-groups, as described above.

- * Step 1 required reducing the 1987 cohort and its corresponding study sub-groups by 49 cases, to exclude those cases which were missing any of the original JCPSS data elements. (In this process, the proportional relationships between the original study groups were maintained.)
- * In Step 2, a sample of 220 minors was initially selected, using age distributions as the criteria to determine the appropriate sample size for each of the three study groups. Three random samples were selected, one from each of the study subgroups, including 78 Non-recidivists, 70 Low Rate Recidivists, and 72 Chronic Recidivists.
- * Steps 3 and 4 of the sample development process required a thorough review of the Juvenile casefiles for each of the cases selected in Step 2. Step 3 confirmed that only minors with initial referrals during the first six months of 1987 were assigned to the study sample. Step 4 verified the number of system contacts during the initial tracking period. (This step included tracking minors into the adult system if they turned 18 during the 30-month follow-up period.) As a result of these two sample development steps, 13 cases were deleted from the study sample and 42 cases were re-assigned to a different study group, as follows.

- * 22% of the Non-recidivist cases were found to be Low Rate recidivists and 5% were found to be Chronic recidivists. (73% remained in the Non-recidivist sub-group.)
- * 4% of the original Low Rate recidivists became Non-recidivists while 22% were found to be Chronic recidivists. (74% remained in the Low Rate recidivist group.)
- * None of the Chronic recidivists were moved to the Non-recidivist group while 6% were found to be Low Rate recidivists. (94% remained in the Chronic recidivist group.)

Without this case review process, the size of the Non-recidivist group would have been overstated while the size of the Low Rate and Chronic recidivist groups would have been understated.

- * During Step 5, the residence status of each minor was verified. As a result, a total of 36 cases were removed from the study sample due to being out-of-county residents.

- * 36% of the Non-recidivist cases were out-of-county residents vs. 16% of the Low Rate recidivists and a mere 6% of the Chronic Recidivist sub-groups.

The following chart provides a comparison of the original study sample with the one ultimately used for all remaining follow-on study analyses.

	"8%" STUDY SAMPLE DEVELOPMENT							
	Step 2: Original Sample (N = 220)		Step 3: Removal of Cases Not In Study Time Frame (N = 207)		Step 4: Adjusted Group Assignments (N = 207)		Step 5: Removal of Out Of County Cases (N = 171)	
	<u>N</u>	<u>% of total</u>	<u>N</u>	<u>% of total</u>	<u>N</u>	<u>% of total</u>	<u>N</u>	<u>% of total</u>
Non- Recidivist Group	78	35%	73	35%	56	27%	36	21%
Low Rate Recidivist Group	70	32%	67	32%	69	33%	58	34%
Chronic Recidivist Group	72	33%	67	33%	82	40%	77	45%

From this sample selection/case review process, the authors concluded that the "8% problem" designation may understate the chronic recidivism rate for juveniles initially referred to the juvenile justice system in Orange County. The actual rate may be somewhat higher but would not be expected to exceed 15%.

B. First-time Ward Data Set (N = 905)

The Orange County Probation Department maintains a Management Information System component -- the Juvenile Profile/Outcome System which consists of the profile of each minor placed under field supervision at the time of their Initial and most recent (or, Final) Assessment for case classification purposes (Ref. Pg. 2). This data base was used to identify a one-year cohort of "first time" juvenile wards i.e. those with no prior arrests or referrals to the Probation Department in Orange County during CY-1987. A total of 1039 cases were initially identified who met these selection criteria.

Cases from this group of first-time wards were then matched to their corresponding records in the JCPSS data file, ref. Pg. 4 (2). 905 of the 1039 first-time wards selected from the Juvenile Profile/Outcome system were found to also have complete records in the 1987 JCPSS data file. This cohort of 905 minors (referred to as the First-time Ward data set) was further partitioned into three sub-groups, based on the number of times the minor was re-referred on an application for petition during the three year follow-up period.

Within the First-time Ward data set, 50% of the cases (450/905) were found to be Non-recidivists, 35% (315/905) were found to be Low Rate recidivists (having 1 or 2 subsequent petitions during the three year follow-up period) and 15% (140/905) were identified as Chronic Recidivists, with a total of four or more petitions during the three year follow-up period.

In order to investigate the relationship between the previously identified problem factors and chronic juvenile offender recidivism rates, variables from the Orange County Juvenile Offender Risk and Needs Assessment scales were selected which most closely approximated the composite problem factor definitions presented on pages 15-16. These data were then subjected to the statistical analyses described in the text of this report.

Data Collection Form:

APPENDIX B

Data Collection Form: 1987 Initial Referral Cohort Study Sample

As described in Section I.C of this research report (reference Pg. 11) and, in Appendix A: Methodology, a sample of minors with their first-ever system referral during the first six months of 1987 was utilized to test several study hypotheses.

One set of hypotheses was related to "problem" factors believed to be associated with a higher risk of chronic re-offending. Specifically, non-recidivists were expected to have a lower average number of problems than low rate recidivists while chronic recidivists were expected to have a higher average number of problems than either the non- or low rate recidivist groups at the time of their initial system referral. Additionally, for the "recidivist" study groups, younger minors (age 15 or less) were expected to have a higher average number of problems than their older counterparts.

In addition to the problem categories included on the Orange County Juvenile Offender Risk Assessment instrument, several measures of delinquency or anti-social behavior were included in the proposed data collection form as a potential substitute for the prior offense behavior measures not applicable to an initial system referral population. From a review of the literature, an Anti-Social Behavior scale was identified for testing purposes (Araza, 1991).

On the attached copy of the "8% study" data collection form, variables from the current Juvenile Offender Risk Assessment instrument are marked with one asterisk (*) while those selected from the Risk Assessment Inventory for Antisocial Children and Adolescents are marked with two asterisks (**).

The following additional issues were targeted for investigation during this study phase.

1. The minor's city of residence -- a variable not available in the original JCPSS database, but of obvious importance for potential program development purposes.
2. The minor's initial referral date, to explore the use of alternate Age factor definitions. (Most of the other juvenile risk instruments surveyed used Age at initial arrest or system referral to describe "early onset.")
3. The minor's Probation Intake status -- Custody Intake (CI) vs. Non-Custody Intake (NCI) - for program planning purposes.

4. The number of days associated with any local or state commitments, for the purposes of assessing cost impact. (The JCPSS disposition data did not include this level of detail.)
5. The source of information -- Intake or Investigation reports -- to determine general information accessibility.
6. Some additional "problem" dimensions aimed at improving predictability of chronic juvenile recidivism with a "front end" referral population (Loeber and Stouthamer-Loeber, 1987).

Subsequent to the planned statistical analyses, a case study approach was utilized to better address the issues of data availability and the consistency of variable definitions in relation to the composite problem factors identified on pages 15-16, as well to conduct an in-depth investigation of the cases generating false positives or negatives when the composite problem factors were utilized to predict study group assignment i.e. Non-recidivist, Low Rate recidivist or Chronic recidivist.

8% STUDY: DATA COLLECTION FORM (7/10/92)

* Denotes measure elected from the Orange County Juvenile Offender Risk/Needs Assessment instrument

I. ID INFORMATION ** Denotes measure selected from the Anti-social Children and Adolescents Risk Assessment Inventory (Araza, 1991)

L. NAME

F. NAME

MI

J#

DOB/MO

DY

YR

AGE

SEX

ETH

1. 2. 3. 4.

CITY OF RESIDENCE

*

NO. PRI ARST

PRIOR WI 300 MATTERS *

1Y
 2N

II. OFFENSE INFORMATION REFERRALS TO PROBATION

1. FIRST REFERRAL

☐ 1CI
☐ 2NCI

MO

DY

YR

HIGHEST CHARGE
PC/WI/CVC

CHRG
CODE

DSPO

DAYS
CMTD

2. SECOND REFERRAL

☐ 1CI
☐ 2NCI

MO

DY

YR

HIGHEST CHARGE
PC/WI/CVC

CHRG
CODE

DSPO

DAYS
CMTD

III. PROBLEMS/ISSUES AT FIRST AND SECOND REFERRAL (ASB)

SOURCE OF INFORMATION

ASB SCALE SCORES **

1. ☐ INTAKE ONLY

FAMILY

☐ DRUG

SCHOOL

2. ☐ INTAK+INVESTG

ASB

☐ PEER

TOTAL
SCORE

RUNAWAY PATTERN *

CRIMINAL FAMILY

FAMILY PROBLEMS *

☐ 1Y
☐ 2N

☐ 1Y
☐ 2N

☐ 1Y
☐ 2N

HISTORY OF LEARNING DISABILITIES/HYPERACTIVITY *

☐ 1Y
☐ 2N

SCHOOL ATTENDANCE *

1. ☐ ENROL/ATND

2. ☐ ENROL NOT ATND

3. ☐ NOT ENROL NOT ATND

EMPLOYMENT *

1. ☐ FULL TIME

2. ☐ PART TIME

3. ☐ NOT WORKING

TYPE DRUG USED

DRUG SALES

GANG MEMBER *

☐ 1Y
☐ 2N

☐ 1Y
☐ 2N

1 2 3 4 5 6 7 8 9 10 11

IV. 3+ REFERRALS

3.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
4.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
5.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
6.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
7.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
8.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
9.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
10.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
11.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
12.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
13.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
14.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		
15.	REFERRAL									
	☐ 1CI	MO	DY	YR	HIGHEST CHARGE	CHRG	DSPO	DAYS		
	☐ 2NCI				PC/WI/CVC	CODE		CMTD		

V. ADULT CRIMINAL HISTORY INFORMATION

—CII RAP SHEET ☐ 1Y
☐ 2N

a. FAMILY **

1. Parental History and Attitude Toward Antisocial Behavior

A: Interview

B: < Low — RISK — High >

1	3	5
No family history of criminality. Parents encourage responsibility for behavior.	Family history of criminality. Parents encourage projecting blame.	Family history of criminality. Parents and child deny responsibility for child's behavior.

2. Youngster's Attitude Toward ASB

A: Interview

B: < Low — RISK — High >

1	3	5
Takes complete responsibility.	Partial willingness to accept responsibility for behavior.	Total denial of responsibility, projects blame, etc.

3. Parental Monitoring and Supervision*

A: Interview

B: < Low — RISK — High >

1	3	5
Know who their child's friends are and where their child is the majority of the time.	Sporadic monitoring of child's friends and child's whereabouts.	No concern for who their child associates with or their child's whereabouts.

b. ANTISOCIAL BEHAVIOR**

1. Age at Onset

A: Interview and/or CBCL Parent/Youth Version

B: < Low — RISK — High >

NOTE: Risk Variable = Age at Initial Assignment

1	2	3	4	5
No adjudication, or 1st at age 16 or later.	1st adjudication age 16 or later with history of undetected ASB.	1st adjudication age 14-15.	1st adjudication age 14-15 with history of undetected ASB.	1st adjudication age 13 with history of undetected ASB.

2. Number of Settings ASB Occurs

A: Interview and/or CBCL Parent/Teacher Version

B: < Low — RISK — High >

1	2	3	4	5
No pattern of ASB.	One setting, no. extensive history of ASB.	One setting & moderate history of ASB.	2 settings & moderate history of ASB.	2 or more settings & extensive history of ASB.

3. Stealing, Stealing and Violence, Violence

A: Interview and/or CBCL Youth/Parent Version

B: < Low — RISK — High >

Separate Stealing and Violence

1	3	5
No involvement in stealing or violence.	Mild to moderate stealing or violence.	Both stealing and violence, opportunistic pattern of ASB.
No reported violence	Occasional violence	Serious repeated viol. b.

<i>c. DRUG USE/ABUSE **</i>		
<i>1. Drugs Used</i>		
A: Interview and/or Testing		
B: < Low — RISK — High >		
1 No use to mild experimentation.	3 Sporadic abuse that is not interfering with functioning in the areas of family, school, friends, etc.	5 Continuous abuse causing disruption in one or more important life area such as family, school, friends, etc.
<i>d. PEER RELATIONSHIPS **</i>		
A: Interview		
B: < Low — RISK — High >		
1 No ASB—oriented friends.	3 Both ASB-oriented and non-ASB-oriented friends.	5 Peer relations limited to youngsters involved in serious delinquent behavior.
<i>e. SCHOOL/WORK *</i>		
<i>1. School Discipline/Work</i> (If the youngster is doing poorly in school but has replaced school with work and is showing the capacity for responsible and productive behavior in the work setting, then this category should be rated based on work performance).		
A: Interview and/or CBCL Teacher Version		
B: < Low — RISK — High >		
1 No problems or 1 or 2 isolated incidents.	3 Supervision(s) for mild to moderate problems with truancy, verbal/physical fighting.	5 Expulsion for history of problem behavior and the youngster has not replaced school with a pattern of responsible behavior.
<i>2. School Academic/Work</i> (If the youngster is doing poorly in school but has replaced school with work and is showing the capacity for responsible and productive behavior in the work setting, then this category should be rated based on work performance).		
A: Interview and/or CBCL Teacher Version		
B: < Low — RISK — High >		
1 Grades consistent with potential.	3 Mild academic problems due to irresponsibility or poor motivation (rule out learning disabilities, emotional problems, etc).	5 No interest or concern about school. Problems are not due to learning disabilities or emotional/medical problems.

APPENDIX C

Back-up Charts

Chart 1

Profile Characteristics of 1987 Initial Referral Cohort ¹ Controlling by Number of Referrals during the 36 month Tracking Period

	Non Recidivists (1 Referral Only) ----- (N = 2205)	Low Rate Recidivists (2-3 Referrals) ----- (N = 663)	Chronic Recidivists (4 + Referrals) ----- (N = 247)	Total ² Referrals ----- (N = 3115)	
Age ---					
15 or Younger	23%	31%	57%	27%	$\chi^2=137$, DF=2
16 or Older	77%	69%	43%	73%	(p<.001)
Gender -----					
Male	74%	81%	85%	76%	$\chi^2=27$, DF=2
Female	26%	19%	15%	24%	(p<.001)
Ethnicity -----					
Caucasian	61%	57%	49%	59%	$\chi^2=15$, DF=4
Hispanic	25%	29%	36%	27%	(p<.005)
Other/Unknown	14%	14%	15%	14%	
Referral Offense -----					
Felony	35%	42%	50%	37%	$\chi^2=28$, DF=2
Misdemeanor	65%	58%	50%	63%	(p<.001)
Disposition of ----- Referral Offense -----					
Closed/Dism, Informal or Transfer	78%	56%	48%	70%	$\chi^2=192$, DF=2 (p<.001)
Ward	22%	44%	52%	30%	

1. Represents all minors with their first ever referral to the Orange County juvenile justice system via an application for petition. Includes both in and out-of-county residents.

2. Selected level of significance = p<.01.

Chart 2

of Composite Problem Factors for 1987 Referral Sample¹ Study Groups
Controlling by Age (15 or younger vs. 16 and older)

	Non Recidivists (1 Referral Only)	Low Rate Recidivists (2-3 Referrals)	Chronic Recidivists (4+ Referrals)	Total ² Referrals
----- Age = 15 or younger -----	(N = 11)	(N = 19)	(N = 49)	(N = 79)
Avg. Number of Factors	.64	1.58	2.67	2.13
% of Total With "N" Factors -----				
0.	55%	16%	0%	11%
1.	27%	42%	16%	24%
2.	18%	16%	27%	23%
3.	0%	21%	31%	24%
4.	0%	5%	27%	18%
----- Age = 16 or older -----	(N = 25)	(N = 39)	(N = 28)	(N = 92)
Avg. Number of Factors	.92	1.20	2.11	1.40
% of Total With "N" Factors -----				
0.	44%	36%	4%	28%
1.	28%	23%	32%	27%
2.	20%	28%	25%	25%
3.	8%	10%	29%	15%
4.	0%	3%	11%	4%

$\chi^2 = 22$, $DF=2$ ³
($p < .001$)

$\chi^2 = 7.4$, $DF=2$ ³
($p = .025$)
not sig.

1. Represents 1987 sample of minors with their first ever referral to the Orange County juvenile justice system via an application for petition. Includes in-county cases only.

2. Selected level of significance = $p < .01$.

3. Total composite factors are collapsed into two groups for statistical analysis.

The first group includes minors with zero and one factor while minors with two or more are in the second group.

Chart 3

Accurate Prediction of Chronic Recidivists using Four Composite Factors
for:

Total 1987 Initial Referral Study Sample (N=171)

	Non & Low Rate Recidivists (1-3 Referrals)	Chronic Recidivists (4+ Referrals)
Not Multi-Problem (0 - 1 Factors)	N=61	N=18
Multi-Problem (2 - 4 Factors)	N=33	N=59
		Correctly Identified 120/171 =70%
		False Positives 33/171 =19%
		False Negatives 18/171 =11%

Younger Minors in Sample Ages 15 & Less (N=79)

	Non & Low Rate Recidivists (1-3 Referrals)	Chronic Recidivists (4+ Referrals)
Not Multi-Problem (0 - 1 Factors)	N=20	N=8
Multi-Problem (2 - 4 Factors)	N=10	N=41
		Correctly Identified 61/79 =77%
		False Positives 10/79 =13%
		False Negatives 8/79 =10%

Older Minors in Sample Ages 16 & Greater (N=92)

	Non & Low Rate Recidivists (1-3 Referrals)	Chronic Recidivists (4+ Referrals)
Not Multi-Problem (0 - 1 Factors)	N=41	N=10
Multi-Problem (2 - 4 Factors)	N=23	N=18
		Correctly Identified 59/92 =64%
		False Positives 23/92 =25%
		False Negatives 10/92 =11%



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Chart 4

Accurate Prediction of Chronic Recidivists using Four Composite Factors
for:

First Time Ward Data Set (N=905)

	Non & Low Rate Recidivists (1-3 Referrals)	Chronic Recidivists (4+ Referrals)
Not Multi-Problem (0 - 1 Factors)	N=508	N=52
Multi-Problem (2 - 4 Factors)	N=257	N=88
		Correctly Identified 596/905 =66%
		False Positives 257/905 =28%
		False Negatives 52/905 = 6%

RETURN
TO →

165L

1	2	3
4	5	6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS

DUE AS STAMPED BELOW

SENT ON ILL	SENT ON ILL	
MAY 05 2003	NOV 17 1995	
U. C. BERKELEY	U. C. BERKELEY	

FORM NO. DD 19

UNIVERSITY OF CALIFORNIA, BERKELEY
BERKELEY, CA 94720



